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PATENT SPECIFICATION

Application Date: July 1, 1924. No. 15,736/24. **234,305**

Complete Left: Sept. 6, 1924.

Complete Accepted: May 28, 1925.

PROVISIONAL SPECIFICATION.

Improvements in and relating to Rotary Propellers.

I, JOHN HENRY BOVEY, 24, Wolaton Terrace, Kingsteignton, near Newton Abbot, Devon, British subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements connected with propellers for ships or anything propelled through water or air and has for its object a bigger boring power and speed making properties. It consists of two propellers rotating on one shaft one boring to the right the other to the left and two rudders one on either side to insure quicker steering.

The double propeller is a slight copy of nature such as that of a fish tail movement.

As the whole thing rotates the front or smaller portion of the propellers being that of a corkscrew shape bores the water or air and the back or hinged portion automatically takes an angle according to speed and so deepens or lessens the bore or slice.

In these propellers each of which possesses two blades a considerable amount of advantage is due to there being fewer blades than in the ordinary propellers the water is not so churned therefore less resistance takes place.

The hinged portion automatically works with the wash and takes angles which collect speed according to the number of revolutions attained.

Dated this 28th day of June, 1924.

J. H. BOVEY.

COMPLETE SPECIFICATION.

Improvements in and relating to Rotary Propellers.

I, JOHN HENRY BOVEY, 24, Wolaton Terrace, Kingsteignton, near Newton Abbot, Devon, British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention of improvements in and relating to rotary propellers for marine and aerial navigation has for its object the provision of a greater boring power and speedmaking properties.

The invention relates particularly to the kind of propulsion means wherein two two-bladed propellers are mounted on the same axis, one behind the other, and rotated in opposite directions, one to the right, the other to the left, by means of a differential gear mounted in a stationary housing.

In the above connection, one propeller was fixedly mounted on the engine shaft, whilst the other propeller was rotatable on a sleeve fixedly connected to the housing aforesaid, said sleeve forming a bearing for the front portion of the engine shaft, and, further, to the boss of the propeller rotatable on the sleeve aforesaid one wheel of the differential was fixedly secured.

It is also known that a propeller has been constituted by a continuous blade, that is to say, the blade was formed helically or in corkscrew fashion on a boss of greater length than the helical length of the blade.

It is also known that propeller blades have been made with a thickened front edge and an elastic back edge, and no claim is made to any of the above arrangements *per se*.

[*Price* 1/-]

According to the present invention, each propeller is a slight copy of nature, such as that of a fish-tail movement, and is constituted by a combined two-bladed propeller with a front or smaller portion of a corkscrew or helical shape, and a resilient, that is to say, a tail or fin portion hingedly connected to the edge of each blade. The outer propeller is keyed to the engine shaft which extends through a vertically disposed hollow bracket mounted on the bottom of the vessel, whilst the inner propeller is carried by a sleeve which is slidably mounted on said engine shaft, said engine shaft and said sleeve each carrying one of the differential gear, which is housed in a two-part casing suspended from the top of and in the interior of the bracket aforesaid; and, further, that portion of the rotatable sleeve which passes through the shell of the vessel is enclosed in a two-part casing bolted together and fitted with asbestos packings.

In order that the said invention may be the more readily understood, reference is to be had to the following description and accompanying sheet of drawings, wherein:—

Figure 1 is a longitudinal elevational view of the propulsion means in accordance with the invention.

Figure 2 is a detached view illustrative of the differential.

Figure 3 is an end view illustrative of part of said differential.

Figure 4 is a rear view of the front propeller.

Figure 5 is a rear view of the rear propeller.

Like letters of reference indicate corresponding parts in the several figures.

In carrying out the invention, and referring to the drawings, a represents the rear propeller which is keyed to engine shaft o and also secured thereon by nut p, said propeller a, which is rotatable to the right, having affixed thereto by long hinges l straight plates g which constitute tails or fins and which tails or fins move automatically with the wash, and a^1 represents the corkscrew or helical portion of said propeller.

b represents the front propeller which is fixedly carried by the sleeve r which is rotatably mounted on the engine shaft o and is rotated to the left, said propeller b having also affixed thereto by long hinges l straight plates g which constitute tails or fins which move automatically with the wash, and b^1 represents the corkscrew or helical portion of said propeller b, the sleeve r carrying said propeller passing through and rotatable in the casing n secured to the shell n^1 of the vessel.

f represents the hollow bracket in which is suspended the two-part casing n^2 in which is housed the differential, the same comprising a crown wheel c keyed to shaft o, pinion wheel i rotatably mounted on spindle m carried by said casing n^2 and bracket f, and crown wheel d keyed to the sleeve r aforesaid, said sleeve r being rotatable in the outer end of said casing, whilst said shaft o is rotatable in the inner end of said casing n^2, said ends being asbestos packed.

As the propellers rotate, the corkscrew or helical portions thereof bore through the water or air whilst the hinged or tail portions of the blades move automatically with the wash and take up varying angles according to the number of revolutions attained, so increasing or decreasing the pitch.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Propulsion means for marine and aerial navigation, said means consisting of a propeller combining, in combinaton, a two-blade propeller, tails or fins hingedly connected to said blades, and a front smaller portion of corkscrew or helical shape, as herein described.

2. Propulsion means as claimed by Claim 1, and wherein two of such propellers are mounted on the same axis, one behind the other and are driven in opposite directions by a differential, characterized in that the front propeller is carried by a sleeve rotatably mounted on the engine shaft which carries the front propeller, and that the differential is housed in a two-part casing suspended in and from a bracket, and that the sleeve aforesaid carries one of the differential and the engine shaft another, whilst the third one is rotatably carried by a spindle in the casing aforesaid, as herein described.

3. The herein described and illustrated improvements in rotary propellers.

Dated the 3rd day of March, 1925.

KINGS PATENT AGENCY LIMITED,
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Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1925.

[This Drawing is a reproduction of the Original on a reduced scale]

Fig. 1.

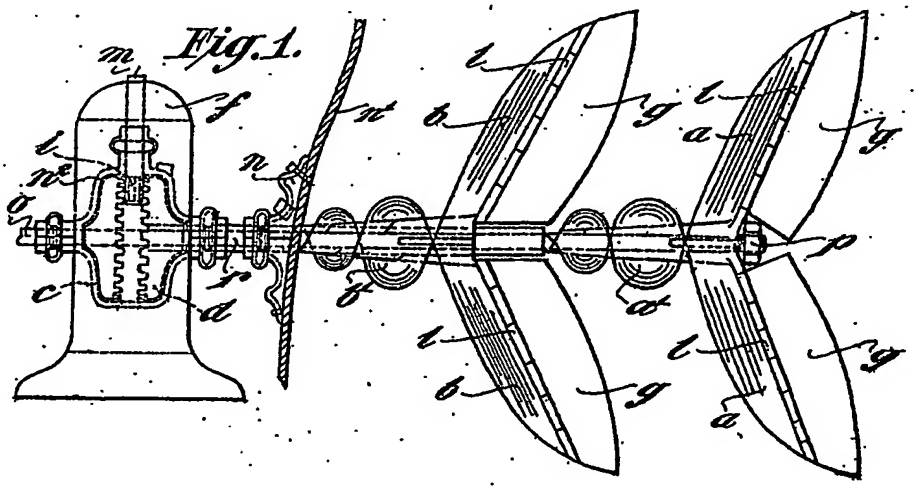


Fig. 2.

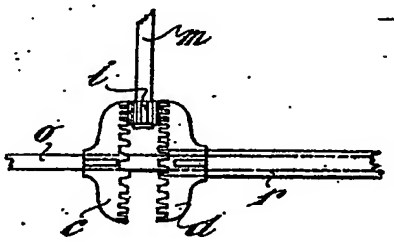


Fig. 3.

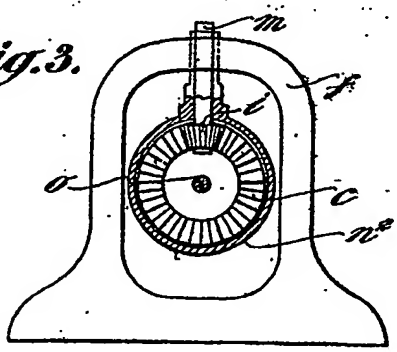


Fig. 4.

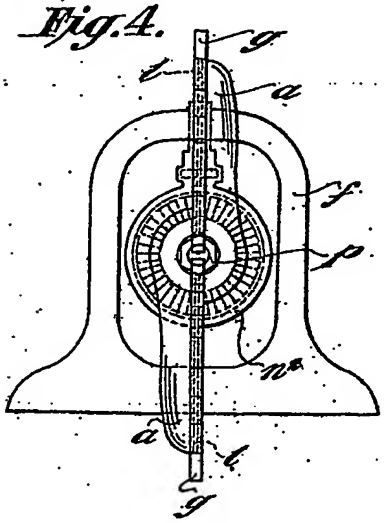
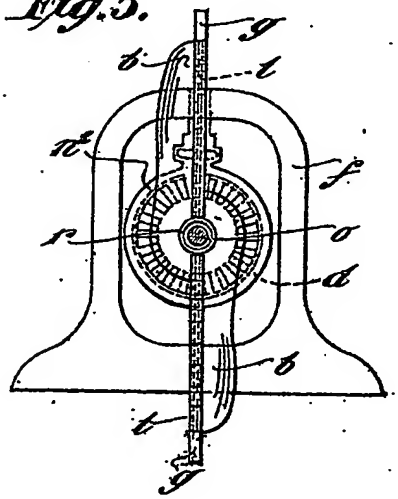


Fig. 5.



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